

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

881-4
PA-788

Ag 84
Pro

~~81-259-030~~

PA-788
Sta

KILLING WEEDS WITH HERBICIDES



Student or Classroom Science Project No. 3

ACC./SERIALS BRANCH

DEC 7 1962

LIBRARY

OBJECTIVE:

To show students (1) how a modern herbicide is selective in killing weed-grasses and (2) the effect on beneficial plants both of proper weed control and of overdosing with herbicide.

MATERIALS NEEDED:

3 wooden greenhouse flats; organic potting soil; 1 one-gallon jug; soybean seeds; annual ryegrass seeds; small amount Treflan¹ (Eli Lilly trade name for trifluralin); rubber bulb-type hand sprinkler; graduate.

PROCEDURE:

Fill three greenhouse soil flats with potting soil; label the flats A, B, and C. Plant a row of soybean seeds, in the long dimension of each flat, at a depth of 1 to 1½ inches. Broadcast annual ryegrass seed over the surface of each flat and gently work the seed into the top half inch of soil.

Prepare concentrated solution of Treflan, which is obtainable from most hardware or garden supply stores, by measuring 6 milliliters of commercial Treflan solution into a gallon jug. Add water to fill bottle and shake vigorously.

Flat A is the control flat; sprinkle with water only; no Treflan. Flat B represents proper application of herbicide on a commercial soybean farm; apply 12.5 milliliters of Treflan solution from gallon jug mixed with 37.5 milliliters of water to each square foot of soil surface. This is equivalent to a 1-lb. per acre rate of application. Flat C shows results of applying too much herbicide. Use 50 milliliters of the concentrated solution to each square foot of soil surface. This is equivalent to a 4-lb. per acre rate of application.

¹ Trade name is used solely for the purpose of providing specific information. Mention of the trade name does not constitute a guarantee or warranty of the product by the U. S. Department of Agriculture or an endorsement by the Department over other products not mentioned.

Apply the herbicide solution uniformly over the soil surface with a rubber bulb hand sprinkler. *Caution:* Wash the sprinkler several times with fresh water to remove all traces of herbicide after use.

Cover the treated area in Flats B and C with about $\frac{1}{4}$ inch of finely sifted potting soil. Water by gentle surface sprinkling or subirrigation as needed to keep soil moist. Soybeans should appear in all flats 4 to 6 days after planting, as should ryegrass in Flat A.

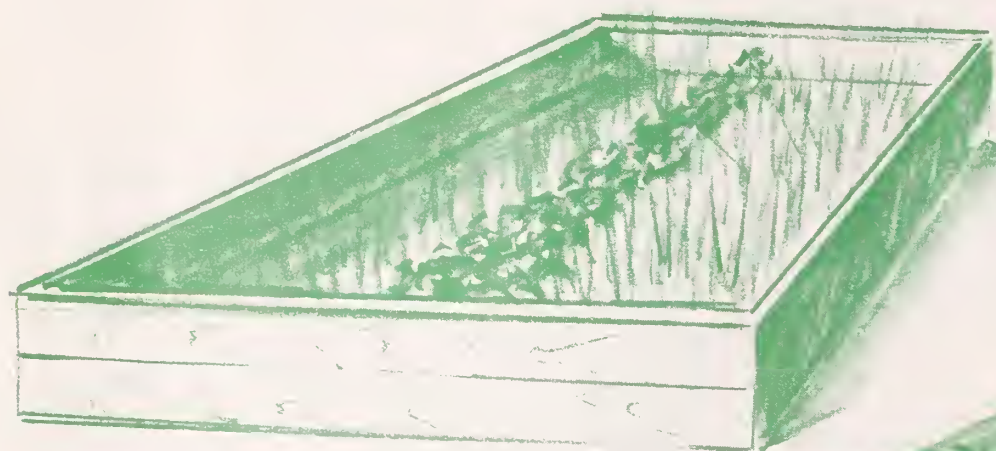
RESULTS:

In Flat A (control), the ryegrass will compete with the soybeans. In Flat B, you should achieve maximum growth of the soybeans, with no grasses germinating. In Flat C, there will be no grasses and the soybeans

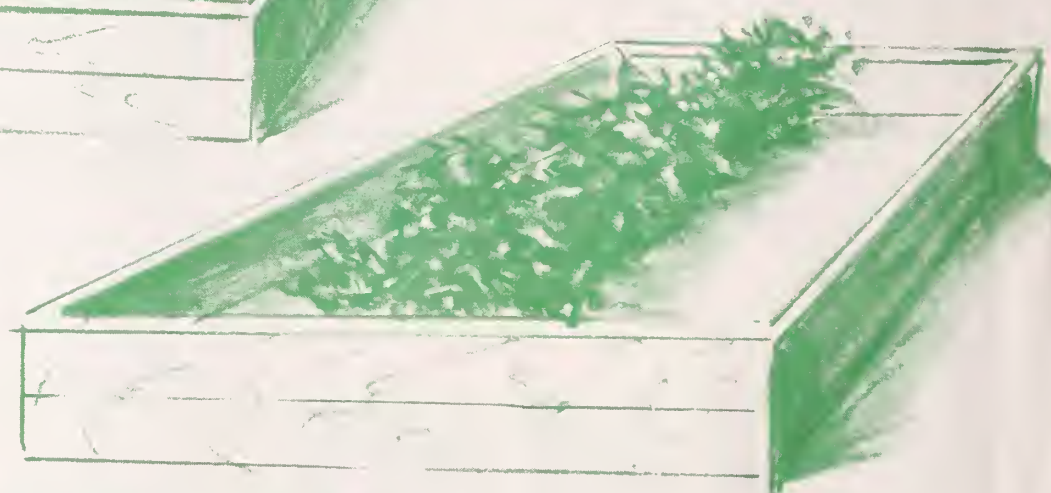
should show stunting as a result of too much herbicide. Trifluralin is so new that little is known of its metabolic effects on plants, but effects on plant respiration are indicated.

Note: Pesticides, including herbicides, can be hazardous if not handled properly. Be sure to read and follow the directions and precautions on the container label. Keep this chemical out of the hands of young children. Trifluralin dyes skin and clothing yellow on contact; use it with care. If you spill some on yourself, wash with soap and water immediately and change clothing if necessary. If herbicide is accidentally splashed in the eyes, flush with water right away. Store excess chemical in a tightly closed, well-labeled container.

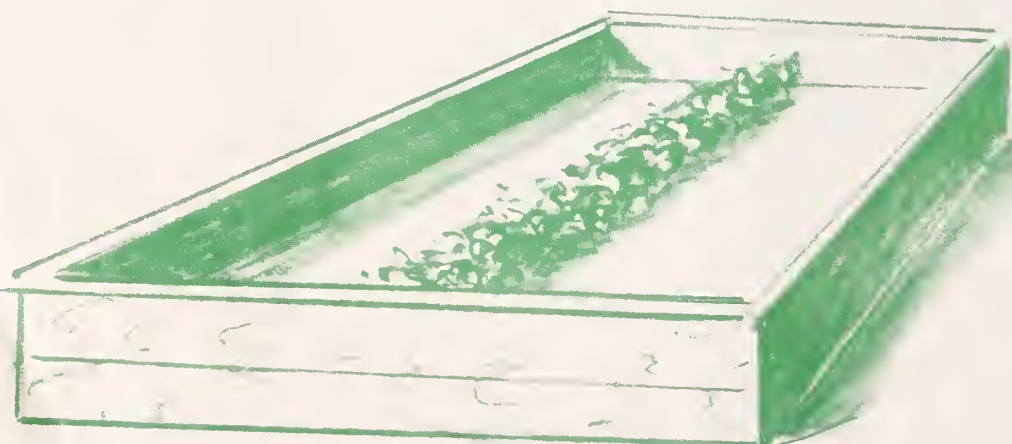
RESULTS OF HERBICIDE APPLICATION EXPERIMENT



FLAT A
NO HERBICIDE APPLIED



FLAT B
HERBICIDE APPLIED CORRECTLY



FLAT C
FOUR TIMES TOO MUCH HERBICIDE